MATP-623US

Appln. No.:10/087,644

Amendment Dated December 28, 2005

Reply to Office Action of September 28, 2005

<u>Amendments to the Claims:</u> This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

1. (Currently Amended) A circuit for applying a transfer function to an input signal comprising:

an input line for receiving the input signal;

a plurality of operators <u>coupled to receive the input signal</u> for generating <u>respective corrected input signal values corresponding to respectively different piecewise-linear segments of the transfer function; <del>and</del></u>

a window detector for determining a value of the input signal and <u>generating a</u> <u>selection signal selecting to select</u> one of the operators based on the value of the input signal; and

a multiplexer, responsive to the selection signal, for selecting one of the respective corrected input signal values corresponding to the selected operator.

wherein the selected one of the operators applies a correction value to correct the value of the input-signal.

- 2. (Original) The circuit of claim 1 wherein the selected operator generates the piecewise-linear segment free of a table for defining the piecewise-linear segments of the transfer function.
  - 3. 4. Canceled
- 5. (Currently Amended) The circuit of claim [[4]]1 wherein the window detector includes a plurality of digital comparators and an encoder for selecting the one respective correction-value-operator to provide the correct the corrected value of the input signal.

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6. (Original) The circuit of claim 1 wherein the selected operator includes a multiplier for multiplying the value of the input signal with a value of a slope of the piecewise-linear segment generated by the selected operator.

7. (Currently Amended) The circuit of claim 1 wherein the selected operator includes a subtractor, a multiplier and an adder;

the subtractor subtracting a lower value of the piecewise-linear segment, generated by the selected operator, from the value of the input signal to provide an offset value;

the multiplier multiplying the offset value with a value of a slope of the piecewise-linear segment to provide a product; and

the adder adding the product and a low output value of the piecewise-linear segment to provide the <u>corrected input signal</u> value.

- 8. (Original) The circuit of claim 1 wherein the input signal is a video signal and the transfer function is an inverse gamma transfer function.
- 9. (Currently Amended) A gamma correction circuit for applying an inverse gamma transfer function to an input video signal, the circuit comprising:

an input line for receiving the input video signal;

a plurality of operators <u>coupled to receive the input video signal</u> for generating <u>respective corrected input video signal values corresponding to respectively different piecewise-linear segments of the inverse gamma transfer function; <del>and</del></u>

a window detector for determining a value of the input video signal and generating a selection signal to selecting select one of the operators based on the value of the input video signal; and

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a multiplexer, responsive to the selection signal, for selecting one of the respective corrected input video signal values corresponding to the selected operator.

wherein the selected one of the operators applies a correction value to correct the value of the input video signal.

10. (Original) The circuit of claim 9 wherein the selected operator generates the piecewise-linear segment free of a table for defining the piecewise-linear segments of the inverse gamma transfer function.

## 11. - 12. Canceled.

- 13. (Currently Amended) The circuit of claim 129 wherein the window detector includes a plurality of digital comparators and an encoder for selecting the one respective correction value operator to correct the value of the provide the corrected input video signal value.
- 14. (Original) The circuit of claim 9 wherein the operator includes a multiplier for multiplying the value of the input video signal with a value of a slope of the piecewise-linear segment generated by the selected operator.
- 15. (Currently Amended) The circuit of claim 9 wherein the operator includes a subtractor, a multiplier and an adder;

the subtractor subtracting a lower value of the piecewise-linear segment, generated by the selected operator, from the value of the input video signal to provide an offset value;

the multiplier multiplying the offset value with a value of a slope of the piecewise-linear segment to provide a product; and

the adder adding the product and a low output value of the piecewise-linear segment to provide the corrected input video signal value.